## FRANK MACEDO Ph.D, P.Eng.

Independent consultant

Frank Macedo recently retired from Hydro One in Ontario, Canada after over 25 years in the utility industry. As Director Special Projects he was assigned to NERC to lead the System Planning, Design & Studies Team investigating the August 14, blackout. Prior to that he was Director, Network Operations responsible for real time operations of Hydro One's transmission and distribution assets across the province of Ontario. In this capacity he led the project to consolidate Hydro One's thirteen control centers into one control center on a greenfield site in Barrie, Ontario. The control center incorporates state of the art technology, tools, training, communications, processes and facilities. Prior to joining Operations Frank was Director, Investment Planning responsible for system development, asset sustainment, interconnections with neighboring provinces and states and generation and load connections i.e. all investments on Hydro One's T&D assets.

Frank has been an expert witness on transmission matters before the Ontario Energy Board and the Ontario Environment Assessment Board. For over 20 years he has been an active participant in NERC and NPCC. He has been an Executive Member of the NERC Planning Committee and Vice Chair of the Planning Standards Sub-Committee of NERC responsible for developing Planning Standards and compliance templates for the industry. He has served on NPCC Task Forces on Planning & Operations and Working Groups revising criteria for planning & operating the bulk power system.

Prior to joining Hydro One (formerly Ontario Hydro) Frank was a Senior Engineer with the National Grid (formerly CEGB), UK responsible for Reactive Power and Voltage Control of the UK high voltage grid. Prior to that he spent several years as an electrical engineer in the Iron & Steel Industry and with a manufacturer of high voltage power system equipment, all in the UK.

Frank holds a bachelors degree in Electrical Engineering from London, UK and a Ph..D in Electrical Power Systems from Bristol, UK. He is a licensed Professional Engineer in the Province of Ontario.